

Amendment to Claims

This listing of Claims will replace all prior versions and listings of claims in this Application.

Listing of Claims

Claims 1-43, inclusive: Cancelled

Claim 44. (CURRENTLY AMENDED) A system for detecting heart sound, comprising:

 a component that filters sound data into frequency bands;

 a component that identifies a frequency band for detection of the heart sound;

 a component that defines a window within each beat of the sound data where the heart sound is expected to be located for heart sounds S1, S2, S3 and S4;

 a component that classifies each beat based on characteristics of the filtered sound data within the defined window of the identified frequency band; and

 a component that indicates the presence of the heart sound based on the classification of the beats.

Claim 45. (ORIGINAL) The system of claim 44 wherein the heart sound is an abnormal heart sound and the classification of each beat is based on a reference amplitude derived from a normal sound of the sound data.

Claim 46. (ORIGINAL) The system of claim 44 wherein each beat is classified as invalid,

not having the heart sound, possibly having the heart sound, or probably having the heart sound.

Claim 47. (ORIGINAL) The system of claim 46 wherein the presence of the heart sound is indicated based on number of beats classified as possibly or probably having the heart sound relative to the number of beats not having a heart sound.

Claim 48. Cancelled

Claim 49. Cancelled

Claim 50. (ORIGINAL) The system of claim 44 wherein the identification of the frequency band is based on analysis of signal-to-noise floor ratio of the filtered sound data.

Claim 51. (CURRENTLY AMENDED) A computer-readable medium containing instructions for controlling a computer system to detect an abnormal heart sound by a method comprising:

filtering sound data into frequency bands;

identifying a frequency band for detection of the heart sound;

defining a window within each beat of the sound data where the heart sound is expected to be located for heart sounds S1, S2, S3 and S4;

classifying each beat based on characteristics of the filtered sound data within the

defined window of the identified frequency band; and
indicating the presence of the heart sound based on the classification of the beats;
wherein, if the heart sound is an abnormal heart sound, the classification of each
beat is based on a reference amplitude derived from a normal sound of the sound data.

Claim 52. (ORIGINAL) The computer-readable medium of claim 51 including determining the location of the heart sound within a beat.

Claim 53. (ORIGINAL) The computer-readable medium of claim 52 including displaying an indication of the location of the heart sound relative to a beat.

Claim 54. (ORIGINAL) The computer-readable medium of claim 51 wherein the defining of the window uses ECG data.

Claim 55. (NEW) A method for detecting a selected heart sound comprising receiving, during a selected common time interval, both ECG and heart-sound data,
characterizing, by filtering, the heart-sound data for heart sounds S1, S2, S3 and S4 in different, selected frequency bands,
applying, for the selected heart sound, an appropriate temporal window to the frequency band information,

analyzing the band information present in the window, and
using the results of said analyzing to indicate the presence or absence of the
selected heart sound.